EAR TECH

Well Development/Purge Log

☐ Development ☐ Purging

Project Name _____ Project No. _____

PID/FID Readings _____ (Ambient) _____ (Well Mouth)

Static Levels _____ (Product) _____ (Water)

Sampling Depth _____

Pump ☐ /Bail ☐ Rate _____ Total Gal. Extracted _____

Water Column Length _____ Well Volumes Extracted _____

Disposition of Discharge Water _____

_____

Specific Capacity _____ (gpm/ft. drawdown) After _____ Hrs.

Well Information

Number _____

Location _____

Datum _____

Elev. Datum Point _____

Ground Elev. _____

Well Diameter _____

Well Depth _____

Well Material _____

Equipment Information

Bailer No. _____

Pump No. _____

Interface Probe No. _____

Sounder No. _____

pH Meter No. _____

Conductivity Meter No. _____

Thermometer No. _____

D.O. Meter No. _____

Turbidity Meter No. _____

ORP Meter No. _____

Time (24 hr.)	Flow Rate (gpm)	Water Temp. (°C)	pH	Cond. µmhos/cm	Dissolved Oxygen mg/l	Turbidity NTU	ORP (mV) +/-	Settleable Solids (ml/L)	Gallons Dev./Purge Before Meas.	Water Level (feet)	Remarks (e.g. water clarity)

Notes:

1 ft length	ft^3	gal.
2"	0.022	0.16
4"	0.087	0.65
10"	0.55	4.1
12"	0.79	5.9

Recorded By _____ Date _____

Checked By _____ Date _____

EARTH TECH

Well Development/Purge Log

(Continuation Sheet)

Page _____ of _____

Project Name _____ Project Number _____ Date _____

Location _____ Well No. _____ Recorded By _____

Time (24 hr.)	Flow Rate (gpm)	Water Temp. (°C)	pH	Cond. µmhos/cm	Dissolved Oxygen mg/l	Turbidity NTU	ORP (mV) +/-	Settleable Solids (ml/L)	Gallons Dev./Purge Before Meas.	Water Level (feet)	Remarks (e.g. water clarity)

Notes:

1 ft length	ft^3	gal.
2"	0.022	0.16
4"	0.087	0.65
10"	0.55	4.1
12"	0.79	5.9

Form F-1003A
2/19/98

EAR TECH

Low Flow/Minimal Drawdown Well Sampling Log

Project Name _____ Project No. _____
PID/FID Readings _____ (Ambient) _____ (Well Mouth)
Static Levels _____ (Product) _____ (Water)
Pump/Sampling Depth _____
Optimum Pump Rate (L/min) _____ Total Liters Extracted _____
Water Column Length _____ Pump/Tubing Volumes Extracted _____
Disposition of Discharge Water _____
Optimum Controller Settings:
Refill Time (sec) _____ Discharge Time (sec) _____ Discharge Pressure (Psi) _____

Well Information

Number _____
Location _____
Datum _____
Elev. Datum Point _____
Ground Elev. _____
Well Diameter _____
Well Depth _____
Well Material _____

Equipment Information

Pump No. _____
Interface Probe No. _____
Sounder No. _____
pH Meter No. _____
Conductivity Meter No. _____
Thermometer No. _____
D.O. Meter No. _____
Turbidity Meter No. _____
ORP Meter No. _____

Time (24 hr.)	Flow Rate (L/min)	Refill Cycle (sec)	Discharge Cycle (sec)	Discharge Pressure (Psi)	Water Temp. (°C)	pH	Cond. mS/cm	Dissolved Oxygen mg/l	Turbidity NTU	ORP (mV) +/-	Settleable Solids (ml/L)	Liters Purged Before Meas.	Water Level (feet Toc)	Remarks (e.g. water clarity)

Notes:

1 ft length	ft^3	gal.	liters
2"	0.022	0.16	0.62
4"	0.087	0.65	2.47
10"	0.55	4.1	15.5
12"	0.79	5.9	22.2

Bladder Volume = 0.495 L = 0.131 gal
1/4" ID Tubing Volume = 0.010 L/ft = 0.002 gal/ft

Recorded By _____ Date _____
Checked By _____ Date _____

EARTH TECH

Low Flow/Minimal Drawdown Well Sampling Log

(Continuation Sheet)

Project Name _____ Project Number _____ Date _____

Location _____ Well No. _____ Recorded By _____

Time (24 hr.)	Flow Rate (L/min)	Refill Cycle (sec)	Discharge Cycle (sec)	Discharge Pressure (Psi)	Water Temp. (°C)	pH	Cond. mS/cm	Dissolved Oxygen mg/l	Turbidity NTU	ORP (mV) +/-	Settleable Solids (ml/L)	Liters Purged Before Meas.	Water Level (feet Toc)	Remarks (e.g. water clarity)

Notes:

1 ft length	ft^3	gal.	liters
2"	0.022	0.16	0.62
4"	0.087	0.65	2.47
10"	0.55	4.1	15.5
12"	0.79	5.9	22.2

Bladder Volume = 0.495 L = 0.131 gal

1/4" ID Tubing Volume = 0.010 L/ft = 0.002 gal/ft

EarthTech
A Tyco International Ltd. Company

Water Elevation Measurement Form

ET PROJECT NO. _____ CONTRACT/TASK ORDER: _____

SITE: _____

ACTIVITIES: _____

Well Number	Depth To Water	Depth To Bottom	Measuring Point Elevation	PID Reading (ppm)	Well Integrity				Comments
					Locked	Capped	Cracked	Obstruct	

Description Of Site: _____

Type of Probe Used: _____

Weather: _____ Temperature: _____

Name: _____ Signature: _____ Date: _____

EARTH TECH

Groundwater Sampling Record

Project Name _____ Project Number _____

Location _____ Site _____

Sampling Depth _____ Recorded By _____

Sample Number _____ Date _____

Duplicate Number _____ Checked By _____

☐ MS/MSD Date _____

Aquifer Parameters

Before Sampling: pH _____ EC _____ Temperature _____ D.O. _____

After Sampling: pH _____ EC _____ Temperature _____ D.O. _____

Sampling Information

Required	Analytical Parameter	Preservation Method	Container Volume	No. Container	Sample	Duplicate	MS/MSD
	MOD 8015 Gasoline	4° C HCl	40 mL G				
	Mod 8015 Diesel/Jet Fuel	4° C	1000 mL AG				
	Volatiles 8260	4° C HCl	40 mL G				
	Semivolatiles 8270	4° C	1000 mL AG				
	ICP Metals 6010 ☐ Unfiltered ☐ Filtered	4° C HNO_3	1000 mL P				
	As 7060, Se 7740 ☐ Unfiltered ☐ Filtered	4° C HNO_3	1000 mL P				
	Pb 7421 ☐ Unfiltered ☐ Filtered	4° C HNO_3	1000 mL P				
	Hg 7470 ☐ Unfiltered ☐ Filtered	4° C HNO_3	1000 mL P				
	Hardness 314A	4° C HNO_3	500 mL P				
	Cyanide 9012	4° C NaOH	500 mL P				
	Organic Lead	4° C	1000 mL P				
	Alkalinity 403	4° C	500 mL P				
	Anions 300.0	4° C	500 mL P				
	TDS 160.1	4° C	500 mL P				
	Hex. Cr 7196	4° C	250 mL P				
	MBAS 425.1	4° C	500 mL P				
	TOC 415.1	4° C H_2SO_4	250 mL AG				
	EDB 504	4° C	1000 mL AG				
	Oil & Grease 413.1	4° C H_2SO_4	1000 mL AG				

EARTH TECH

Borehole Log

Project Name:		Project Number:
Borehole Location:	Borehole No.	Sheet 1 of
Drilling Agency:	Driller:	
Drilling Equipment:	Date Started:	Total Depth (feet):
Drilling Method:	Date Finished:	Depth to Bedrock (feet):
Drilling Fluid	Number of Samples:	Depth to Water (feet):
Completion Information:	Borehole Diameter (in):	Elevation and Datum:
	Logged by:	
	Checked by:	Date:

Depth (feet)	Sample					Field Analysis		LOG		Lithologic Description	Remarks
	Number	Interval	Blow Count	Recovery	Time	FID (ppm) S/B*	PID (ppm) S/B*	Graphic	USCS or Rock Type		
5											
10											
15											
20											
25											
30											

Key * S/B = Sample reading / background reading; NA = not analyzed

Form F-1009
5/1/95

EARTH TECH

Borehole Log
(Continuation Sheet)

Project Name:	Project Number:	Sheet of
		Logged by:
Borehole Location:	Borehole Number:	Date:

Depth (feet)	Sample: Number	Sample: Interval	Sample: Blow Count	Sample: Recovery	Sample: Time	Field Analysis: FID (ppm) S/B *	Field Analysis: PID (ppm) S/B *	LOG: Graphic	LOG: USCS or Rock Type	Lithologic Description	Remarks
5											
0											
5											
0											
5											
0											
5											
0											

* S/B = Sample reading / background reading; NA = not analyzed

Form F-1009A
5/1/95

EARTH TECH

Decontamination Record

Project Name _____ Project Number _____

Recorded By _____ Site _____

Date _____ Time _____ Checked By _____

Date _____

Decontamination after borehole/well/sampling point _____

Equipment	Use	Steam/Hot Water	Detergent/Water	Potable Water	Deionized Water	Type II Water	Other Water	Methanol	Hexane	HNO_3 (Dilution)			Equip. Blank No.
Drill Rig I.D.													
Drill Rods													
Augers													
Soil Sampler I.D.													
Pump I.D. Type													
Bailer I.D.													
Trowel I.D.													
Hand Auger I.D.													

Use key : GS - Groundwater Sampling, SS - Soil Sampling, WP - Well Purging

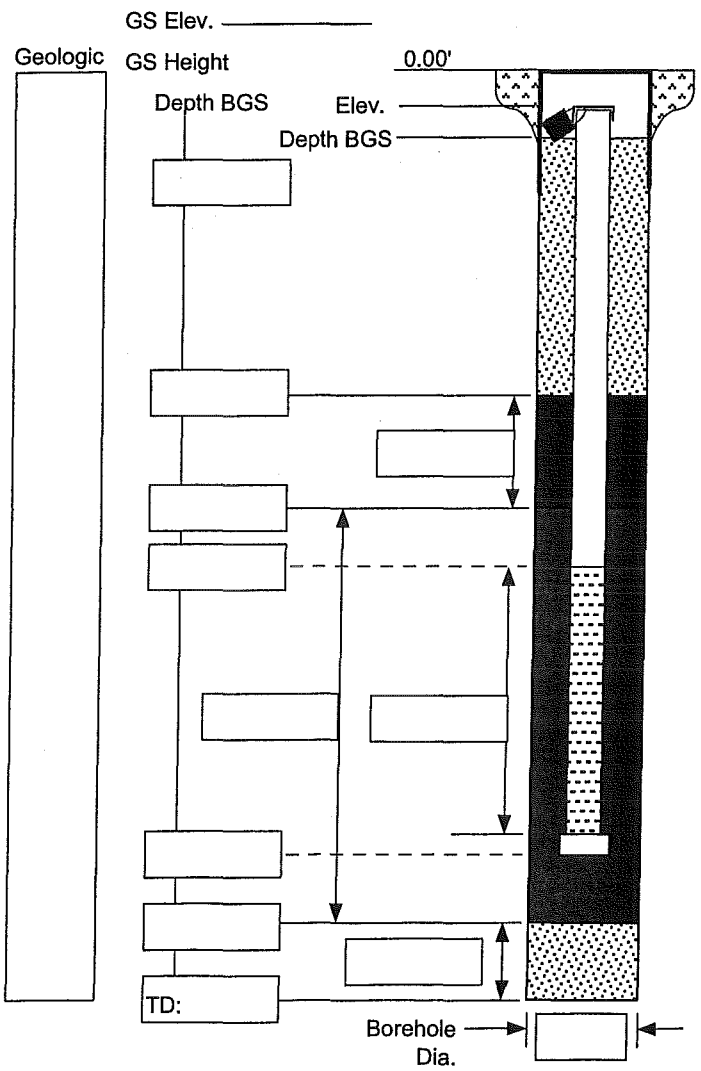
Comments (e.g. initial decon, between which locations, or if last decon for the day)

Form F-1022
5/1/95

EARTH TECH

Monitoring Well Construction Log - Flush Mount

Project Name:	Project Number:	Date:
Well Location:	Well ID:	Sheet ____ of ____
Driller:	Borehole Diameter (in):	Total Depth (ft):
Drilling Agency:	Date Started:	Depth to Water (ft):
Drilling Equipment:	Date Finished:	Elevation and Datum:
Drilling Method:	Logged by:	Checked by:
Drilling Fluid:	Number of Samples:	Date:



PROTECTIVE CSG
Material / Type:
Diameter: _____
Depth BGS: _____ Weep Hole (Y / N)

GUARD POSTS (Y / N)
No.: _____ Type: _____

SURFACE PAD
Composition and Size: _____

RISER PIPE
Type: _____
Diameter: _____
Total Length (TOC to TOS): _____
Ventilated Cap (Y / N)

GROUT
Composition and Proportions: _____
_____
Tremied (Y / N)
Interval BGS: _____

CENTRALIZERS
Depth(s) _____

SEAL
Type: _____
Source: _____
Setup / Hydration Time: _____ Vol. Fluid Added _____
Tremied (Y / N)

FILTER PACK
Type: _____
Amt. Used: _____
Tremied (Y / N) _____
Source: _____
Gr. Size Dist.:

SCREEN
Type: _____
Diameter: _____
Slot Size and Type: _____
Interval BGS: _____

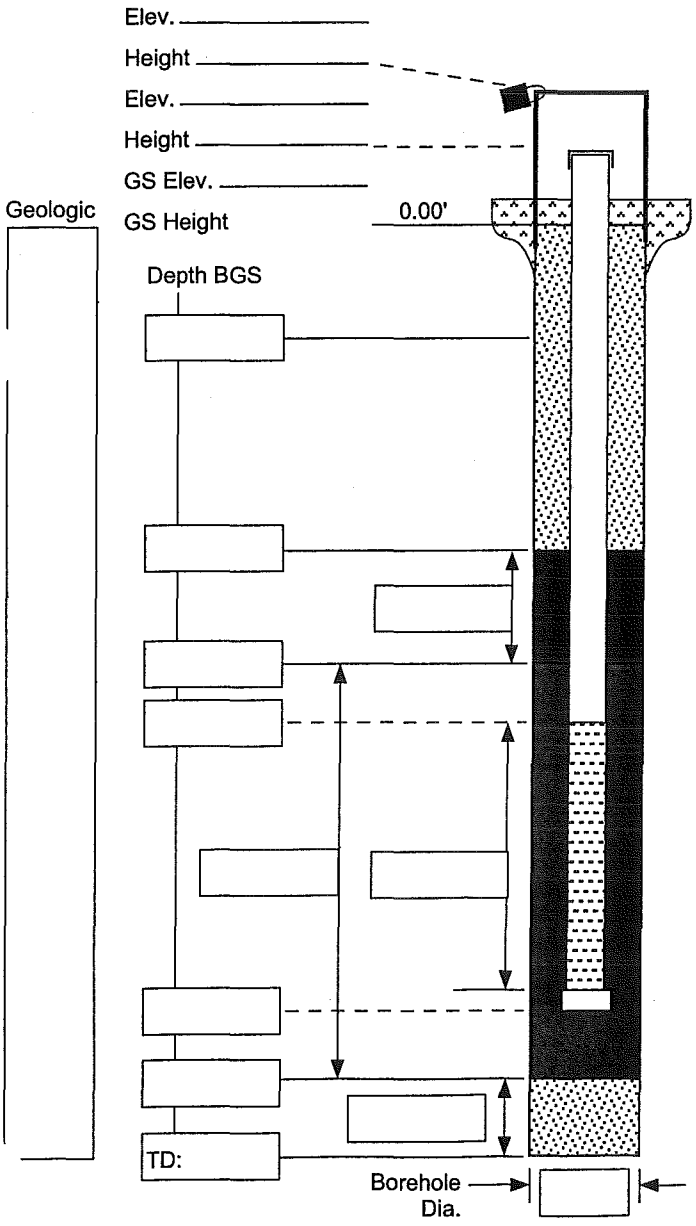
WELL FOOT (Y / N)
Interval BGS: _____ Length _____
Bottom Cap (Y / N)

BACKFILL PLUG
Material: _____
Setup / Hydration Time: _____
Tremied (Y / N)

EARTH TECH

Monitoring Well Construction Log - Above Ground

Project Name:	Project Number:	Date:
Well	Well ID:	Sheet ____ of ____
Driller:	Borehole Diameter (in):	Total Depth (ft):
Drilling Agency:	Date Started:	Depth to Water (ft):
Drilling Equipment:	Date Finished:	Elevation and Datum:
Drilling Method:	Logged by:	Checked by:
Drilling Fluid:	Number of Samples:	Date:



PROTECTIVE CSG

Material / Type:

Diameter: _____

Depth BGS: _____ Weep Hole (Y / N)

GUARD POSTS (Y / N)

No.: _____ Type: _____

SURFACE PAD

Composition and Size: _____

RISER PIPE

Type: _____

Diameter: _____

Total Length (TOC to TOS): _____

Ventilated Cap (Y / N)

GROUT

Composition and Proportions: _____

_____

Tremied (Y / N)

Interval BGS: _____

CENTRALIZERS

Depth(s) _____

SEAL

Type: _____

Source: _____

Setup / Hydration Time: _____ Vol. Fluid Added _____

Tremied (Y / N)

FILTER PACK

Type: _____

Amt. Used: _____

Tremied (Y / N) _____

Source: _____

Gr. Size Dist.:

SCREEN

Type: _____

Diameter: _____

Slot Size and Type: _____

Interval BGS: _____

WELL FOOT (Y / N)

Interval BGS: _____ Length _____

Bottom Cap (Y / N)

BACKFILL PLUG

Material: _____

Setup / Hydration Time: _____

Tremied (Y / N)

Form F-1024
5/1/95

EARTH TECH

Soil / Sediment Sampling Record

Project Name _____ Project Number _____

Location _____ Sample Number _____

Recorded By _____ Duplicate Number _____

Date _____ Checked by _____

Site _____ Date _____

Sampling Equipment _____

Sample Type: ☐ Soil ☐ Sediment ☐ Rock

Sample Type Description

USCS Soil Type _____

Color _____

Odor _____

Depth _____

Number of Samples _____

Comments _____

_____

Sampling Point (sketch):

Decontamination

Equipment: ☐ Hand auger

Type _____

☐ Trowel

☐ Other _____

Decontamination Fluids: _____

☐ Steam/Hot Water ☐ Methanol

☐ Detergent/ Water ☐ Hexane

☐ Potable Water ☐ HNO_3 ; dilution

☐ Deionized Water ☐ Other _____

Form F-1026
5/1/95

EARTH TECH

Equipment Calibration Daily Log
Water Equipment

Project Name _____ Date: _____

Project No. _____ Location _____ Time: AM _____

Positive response checks will be done every 4 hrs.; AM, Midday and PM PM _____

pH Meter

Model _____ Serial No. _____

	AM	Adjustment	PM		
pH 7.00 Buffer Solution: pH				Exp. Date	Lot #
pH 4.00 Buffer Solution: pH				Exp. Date	Lot #
pH 10.00 Buffer Solution: pH				Exp. Date	Lot #

Temperature _____ (AM) _____ (PM) Comments _____

Operator Signature _____ (AM) _____ (PM)

Conductivity Meter

Model _____ Serial No. _____

Calibration Solution _____ Exp. Date _____ Lot # _____

	AM	Adjustment	PM
Micromho Reading			

Comments _____

Temperature _____ (AM) _____ (PM)

Operator Signature _____ (AM) _____ (PM)

Turbidimeter

Model _____ Serial No. _____

Comments _____

Calibration Blank	AM	Adjustment	PM

Operator Signature _____ (AM) _____ (PM)

Dissolved Oxygen Meter

Model _____ Serial No. _____

Calibration Method _____ Comments _____

Precalibration (mg/L) _____ (AM) _____ (PM)

Post-calibration (mg/L) _____ (AM) _____ (PM)

Operator Signature _____ (AM) _____ (PM)

Oxidation/Reduction Potential Meter

Model _____ Serial No. _____

Zobell Solution Expiration Date _____ Zobell Solution Lot No. _____

	Temp.(Zobell Solution)	Expected Reading	Actual Reading
AM			
PM			

perator Signature _____ (AM) _____ (PM)

Checked By _____ Date _____

Form F-1027A
3/18/98

EARTH TECH

Equipment Calibration Daily Log
Gas Detectors

Project Name _____ Date: _____

Project No. _____ Location _____ Time: Begin _____

End _____

Positive response checks will be made every 4 hrs.: AM, Midday and PM

Combustible Gas Indicator

Model _____ Serial No. _____

Ambient Air Readings

	Begin	Adjustment	End
O_2 (%)		(span)	
CO (ppm)		(zero)	
H_2S (ppm)		(zero)	
LEL (%)		(zero)	

Comments _____

Operator Signature _____ (Begin) _____ (End)

Photo-Ionization Detector

Model _____ Serial No. _____

Bulb Type ☐ 10.2 meV (56 ppm baseline)
☐ 11.7 meV (66 ppm baseline)
☐ Other _____

Post warm-up background _____ (ppm)

Comments _____

Calibration Gas:	Begin	Adjustment	End
100 ppm isobutylene			
_____			

Operator Signature _____ (Begin) _____ (End)

Organic Vapor Analyzer

Model _____ Serial No. _____

Calibration Gas: _____ (ppm) Gas Select _____

	Begin	Adjustment	End
Reading			
Background			

Comments _____

Operator Signature _____ (Begin) _____ (End)

Checked by _____ Date _____

Form F-1027B
5/1/95

EarthTech
A Tyco International Ltd. Company

Investigation Derived Waste Container Tracking Form

ET PROJECT NO. _____ CONTRACT/TASK ORDER: _____

SITE: _____

ACTIVITIES GENERATING WASTE: _____

LOCATION OF CONTAINER STORAGE: _____

Container ID	Type of Container	Generation Dates	Estimated Volume of IDW (full, ½ full, etc)	Description of Waste (soil cuttings, decon water, etc)	Location ID	Depth Interval	Field Evidence of Contami-nation?	Comments
V15-D03	D	8/22/05	Full	Soil cuttings	15MW28	0-20 feet	Diesel odor	EXAMPLE

Code for Container ID and type of container:
D = drum, R = roll-off bin, T = Baker® tank or equivalent

Name _____ Signature _____ Date _____

EarthTech
A Tyco International Ltd. Company

Field Sample Identifier / Code Reference Sheet

ET PROJECT NO. _____ SITE: _____

LABORATORY: _____ SHIPMENT DATE: _____

SHIPMENT NUMBER:_____ COC NUMBER: _____ COOLER NUMBER: _____

Sample	Field Sample ID			Sample Type	Matrix	Sampling Depth		Sampling Date	Sampling Time	Sampling Method	Sampling Reason	Sampler
	Site ID	Location ID	Extension			Begin	End					
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.												
12.												
13.												
14.												
15.												
16.												
17.												
18.												
19.												
20.												

Location ID:
AB – Ambient Blank
B – boring (non-DP)
DP – Direct Push Boring
EB – Equipment Blank
IW – Injection Well
MW – Monitoring Well
PH – Phyto (I.e., Tree)
TB – Trip Blank
TW – Temporary Well

Sample Type:
AB – Ambient Blank
EB – Equipment Blank
FD – Field Duplicate
FR – Field Replicate
N – Normal
PE – Performance Eval.
TB – Trip Blank

Matrix:
AA – Ambient Air
AE – Vapor Extraction Well
AQ – Air Quality Control
CR – Carbon
GQ – Active Soil Gas QC
GS – Active Soil Gas
LF – Free Product
LH – Liquid Hazard. Waste
SC – Cement
SD – Drill Cuttings
SE – Sediment
SL – Sludge
SO – Soil
SW – Wipe
TA – Animal Tissue
TP – Plant Tissue
TPC – core
TPL – leaf
TPR – root
TPS – stem
WG – Groundwater
WH – Source Water
WQ – Water QC
WS – Surface Water
WW – Waste Water

Sampling Reason:
BNCH – Bench Test
GWD – Groundwater Divide
NA – Not Available
PS – Pilot Study
RBD – Rebound Sampling
SAGW – Semi-annual Groundwater
SI – Site Investigation
TS – Treatment System